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88/553,516	12/18/97	POLK	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO. 97-5126
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EXAMINER LEE, D

ART UNIT 1732	PAPER NUMBER
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DATE MAILED: 12/11/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/993,516

Applicant(s)

Polk Jr.

Examiner

Dae Lee

Group Art Unit

1732



☒ Responsive to communication(s) filed on Dec 18, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-13 is/are pending in the application.

Of the above, claim(s) 8-13 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-7 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims 1-13 are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-7, drawn to a Thermoplastic Molding Process, classified in class 264, subclass 145.
 - II. Claims 8-13, drawn to a Thermoplastic Molding Apparatus, classified in class 425, subclass 113.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus or by hand. One such case is manually trimming the extruded slab as claimed instead of incorporating a trimmer.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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4. During a telephone conversation with William M. Hobby on November 17, 1998, a provisional election was made with oral traverse to prosecute the invention I, claims 1-7. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Referring to Figures 1 and 2:

on page 6, line 4 "thermoforming apparatus 10";

on page 6, line 19 "support platform 18";

on page 6, line 22 "wheels 20".

Referring to Figures 3A-3B:

on page 7, lines 17-18 "thermoplastic molding apparatus 10";

on page 7, line 25 "mold A" and "mold B";

on page 7, lines 29-30 "central axis shaft 22".

Correction is required.

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Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites the limitation "the extrusion" in lines 3-4 and "the thickness" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Okumura *et al* (USPN 5500170). Okumura *et al* teach the claimed process of molding a thermoplastic, the steps of the method comprising:

- a. Selecting an extrusion die with adjustable die gate members (col 7, ln 35-48);

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- b. Heating a thermoplastic material to a melted condition (fluid) (col 1, ln 10-14;
col 3, ln 34);
- c. Adjusting the extrusion die for varying the thickness of the extruded material
(col 3, ln 36-38);
- d. Extruding a block (slab) of composite (thermoplastic) material through the die
(col 3, ln 23-24);
- e. Cutting (trimming) the block to a desired width, length and thickness
(predetermined size) (col 8, ln 18-25);
- f. Placing the block in a compression (thermoforming) mold (col 8, ln 36-41);
- g. Compression molding the block (col 3, ln 34-35).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura *et al* (USPN 5500170) in view of Murayama *et al* (USPN 4776782). The above discussion of Okumura *et al* applies herein.

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Okumura *et al* teach the basic claimed method of molding a thermoplastic as discussed above but does not teach having a movable mold which can be rotated on a table. However, Murayama *et al* do teach moving the female compression mold (thermoforming mold) having a molded part therein while the mold is cooled (col 9, ln 39-46). Murayama *et al* also teach moving a second female mold in position for receiving the next trimmed extruded material (thermoplastic slab) (col 11, ln 45-62). Murayama also teach rotating the female molds on a table to be in a position to receive a trimmed extruded material (col 11, ln 45-62; abstract, ln 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Murayama *et al* with the thermoplastic molding method of Okumura *et al* in order to increase the production of the thermoformed articles.

13. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura *et al* (USPN 5500170) in view of Murayama *et al* (USPN 4776782) and further in view of Knopf (USPN 4517145). The above discussions of Okumura *et al* and Murayama *et al* apply herein.

Okumura *et al* teach the basic claimed method of molding a thermoplastic as discussed above but does not teach using a die with a plurality of gates. However, Knopf does teach a extrusion die head with a plurality of inner flow surfaces (die gates) which can be separately adjustable to thereby vary the thickness across the thermoplastic material being extruded (col 3, ln 14-18; col 5, ln 59-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Knopf with the thermoplastic molding

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process of Okumura *et al* in order to extrude a material with a varying thickness throughout the slab's width. Okumura *et al* do teach using a drive motor to adjust the die gate, but does not teach the gate being moved with a electric stepper motor. Knopf does teach controlling a gap but also does not teach an electric stepper motor. However, a electric stepper motor is well known in the art and it would have been obvious to one of ordinary skill in the art to use the well known electric stepper motor with the extrusion die of Knopf in order to more precisely control the thickness of the extruded material.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Harada *et al* (USPN 4470790) teach a adjustable extrusion die assembly. Reifenhauser *et al* (USPN 4594063) also teach a variable or calibrating extrusion die. Linss *et al* (USPN 5330342) teach extruding a preform with variable thickness. Reilly *et al* (USPN 3933417) teach thermoforming a variable thickness preform.
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dae Young Lee whose telephone number is (703) 305-0393. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

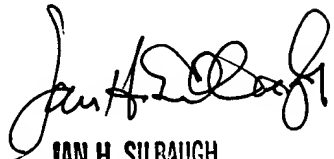
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan H. Silbaugh, can be reached on (703) 308-3829. The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

DYL

December 7, 1998


JAN H. SILBAUGH
SUPERVISORY PATENT EXAMINER
ART UNIT 1732
12/07/98